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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/074,333	02/12/2002	Claude C. Granel	IR 3534	5706

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EXAMINER	
ROBERTSON, JEFFREY	
ART UNIT	PAPER NUMBER
1712	

DATE MAILED: 02/27/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/074,333	GRANEL ET AL.	
	Examiner	Art Unit	
	Jeffrey B. Robertson	1712	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 February 2002* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 2-4, 7, 9, 10, and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Thompson (U.S. Patent No. 3,644,255) as exemplified by Stephenson (United States Statutory Invention Registration H1279).

The Stephenson reference is relied on solely for the teaching of inherent characteristics of the silanes of Thompson in accordance with MPEP § 2131.01 (III).

For claims 2, 4, 9, and 10, in Example 1, column 3, lines 29-59, Thompson teaches a polyvinyl fluoride polymer (corresponding to applicant's part a)), an aminopropyltriethoxy silane and a methyl methacrylate/ butyl acrylate/ itaconic acid terpolymer (corresponding to applicant's part b)). For claim 12, the acrylate polymer also contains the functional monomer, itaconic acid. In column 1, lines 14-35, and column 2, lines 29-36, Thompson teaches that the silane is attached to the acrylate terpolymer. For claim 3, since the Example shows that the preparation is carried out in the form of a dispersion, the fluoropolymer is uniformly distributed throughout the resulting fluoropolymer blend. Note that in this case, the constituents taught by Thompson correspond to applicant's a) and b) where a) and b) are different. For claim

7, in column 1, line 59, Thompson teaches that polyvinylidene fluoride may also be used. For claim 14, please note that the silane has an amino functional group.

Thompson does not specifically mention that the silane is hydrolytically stable. Stephens, in column 1, lines 57-64, teaches that silanes containing ethoxy groups are known as hydrolytically stable silanes. Thus the silane used by Thompson is a hydrolytically stable silane. For claim 13, Stephenson also refers to the steric bulk of the ethoxy groups as being great.

3. Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by Tomonori et al. (Machine Translation of JP 05-186907).

For claim 15, in paragraph [0004] of the translation Tomonori teaches a polymer blend of fluoropolymer and a vinyl system polymer. In paragraph [0011], Tomonori teaches that the fluoropolymer may be copolymerized with a silyl monomer.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 5, 16, and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimizu et al. (English Translation of JP 05-170909) in view of Chen et al. (U.S. Patent No. 5,621,038).

For claims 1, 18, and 19, in paragraph [0040], Shimizu teaches aqueous dispersions of fluoropolymers that are used in paint compositions (with titanium oxide as

the pigment). For claim 20, in paragraph [0041], Shimizu teaches that the paint is dried. For claims 1, 5, and 16, in Application Example 1, paragraphs [0036] through [0039] Shimizu teaches the synthesis of a fluoropolymer dispersion that is prepared through the use of a fluoropolymer as a seed polymer where acrylate monomers and silane monomers are added to the fluoropolymer. In application Example 4, paragraph [0040], Shimizu specifically teaches methacryloxypropyl trimethoxysilane as a silane monomer. For claim 21, here also Shimizu teaches the presence of acrylic acid as a monomer, which can perform the function of an internal buffer.

Although Shimizu appears to be concerned with the stability of the dispersions on pages 19 and 20, paragraphs [0038] and [0039], Shimizu fails to teach or suggest the use of a hydrolytically stable silane-containing group.

In column 2, lines 43-67, Chen et al. teaches that use of alkoxy silanes where the silanes are sterically hindered provides stability in aqueous medium, where the silane groups are used to modify organic polymers such as acrylics. In column 3, lines 1-12, Chen et al. teaches suitable silanes such as 3-methacryloxypropyl tri-iso-propoxysilane.

Chen et al. and Shimizu et al. are analogous art in that they both teach the use of silylated polymers in aqueous medium used for coating compositions. It would have been obvious to one of ordinary skill in the art at time of the invention to use the silanes of Chen et al. in the compositions of Shimizu. The motivation would have been that since Shimizu is concerned with the stability of the emulsions, one of ordinary skill in the art would have been motivated to use hydrolytically stable silanes of Chen et al. in order to improve the stability of the dispersions of Shimizu for storage.

6. Claims 6 and 11 rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (U.S. Patent No. 3,644,255) as exemplified by Stephenson (United States Statutory Invention Registration H1279) as applied to claim 2 above, and further in view of Tomonori et al. (Machine English Translation of JP 05-186907).

Thompson as exemplified by Stephenson teaches the limitations of claim 2 as detailed above. Thompson does not teach or suggest fluoropolymers that are copolymers and containing a non-fluorinated monomer.

Tomonori teaches similar compositions that are used for coatings. In paragraph [0005] of the translation Tomonori teaches that fluoropolymer may be a copolymer where a non-fluorinated monomer containing a hydroxyl group is used.

Thompson and Tomonori are analogous art in that they both contain blends of fluorinated and vinyl polymers that are used for coating compositions formulated in organic solvents. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the fluorinated copolymers of Tomonori in the compositions of Thompson. The motivation would have been that the use of the fluorinated copolymers containing hydroxyl groups improves the solvent resistance of the resulting paint as set forth in paragraph [0001] of the Tomonori translation.

7. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (U.S. Patent No. 3,644,255) as exemplified by Stephenson (United States Statutory Invention Registration H1279) as applied to claim 2 above, and further in view of Cavanaugh (U.S. Patent No. 4,514,537).

Thompson as exemplified by Stephenson teaches the limitations of claim 2 as detailed above. Thompson does not teach or suggest fluorinated acrylic or vinyl polymers.

Cavanaugh teaches blends of fluoropolymers and fluorinated acrylic polymers in column 1, line 43 through column 2, line 12. In column 3, line 34 through column 4, line 11, Cavanaugh teaches that fluorinated acrylic polymers may be added as water repellant additives, and that these polymers are soluble in organic solvents.

Thompson and Cavanaugh are analogous art in that they both contain blends of fluorinated and vinyl polymers that are used for coating compositions. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the fluorinated acrylic polymers of Tomonori in the compositions of Thompson. The motivation would have been that the use of the fluorinated acrylic polymers improves the ability of the resulting paint to repel water.

8. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuda et al. (U.S. Patent No. 5,712,335) in view of Chen et al. (U.S. Patent No. 5,621,038).

For claim 17 in column 7, lines 13-65, Tsuda teaches the preparation of fluoropolymers by copolymerization of fluoromonomer with a silane. For claim 17, in Preparation Example 7, column 10, lines 50-57and Table 2, column 11, lines 41-65 Tsuda teaches the synthesis of a fluoropolymer dispersion that is prepared through the use of a fluoromonomer where acrylate monomers and silane monomers are added to the fluoropolymer. Here, Tsuda specifically teaches methacryloxypropyl trimethoxysilane as a silane monomer.

Although Tsuda appears to be concerned with the stability of the dispersions in column 6, lines 34-45, and column 8, lines 6-15, Tsuda fails to teach or suggest the use of a hydrolytically stable silane-containing group.

In column 2, lines 43-67, Chen et al. teaches that use of alkoxy silanes where the silanes are sterically hindered provides stability in aqueous medium, where the silane groups are used to modify organic polymers such as acrylics. In column 3, lines 1-12, Chen et al. teaches suitable silanes such as 3-methacryloxypropyl tri-iso-propoxysilane.

Chen et al. and Tsuda et al. are analogous art in that they both teach the use of silylated polymers in aqueous medium used for coating compositions. It would have been obvious to one of ordinary skill in the art at time of the invention to use the silanes of Chen et al. in the compositions of Tsuda. The motivation would have been that since Tsuda is concerned with the stability of the dispersions, one of ordinary skill in the art would have been motivated to use hydrolytically stable silanes of Chen et al. in order to improve the stability of the dispersions of Tsuda for storage.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Gangal et al. (U.S. Patent No. 4,370,376), Goll (U.S. Patent No. 4,510,282), Nishioka (U.S. Patent No. 4,946,889), and Chen et al. (U.S. Patent No. 5,827,922) are cited for teaching related compositions and methods.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey B. Robertson whose telephone number is (703) 306-5929. The examiner can normally be reached on Mon-Fri 7:00-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert A. Dawson can be reached on (703) 308-2340. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Jeffrey B. Robertson
Examiner
Art Unit 1712

JBR
February 26, 2003